

# **RHIC Machine/Detector Planning Meeting**

2 Mar 05

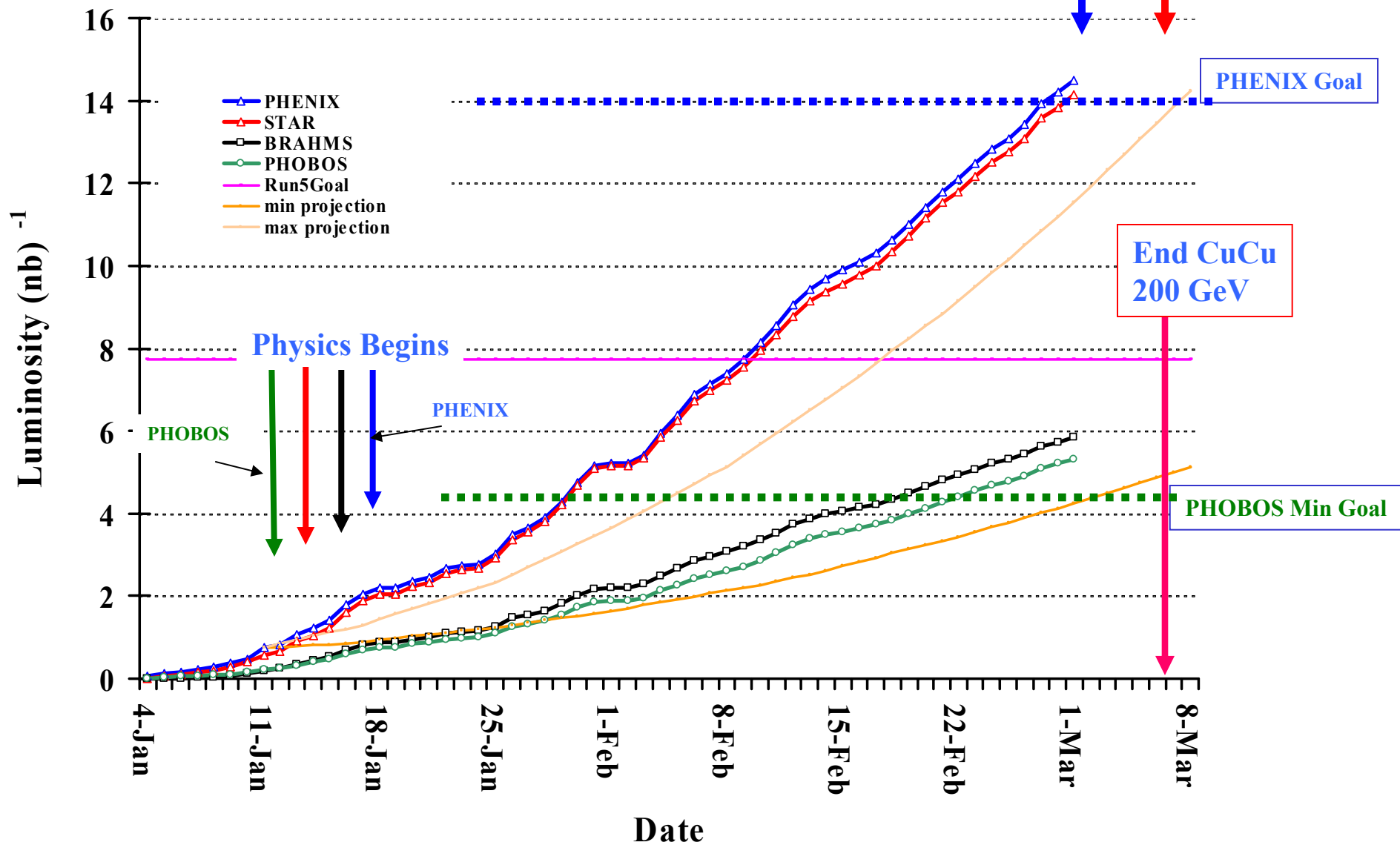
## **Agenda**

- **Schedule Issues – (Montag)**
- **Report from experiments  
(STAR,PHOBOS,PHENIX,BRAHMS)**
  - **Progress toward goals**
  - **Other**
- **Report from Accelerators (Pilat)**
- **Polarized Proton Update (Bai)**
- **RCF Issues (Throwe)**
- **Other business**

Planning Meeting Web Site: [http://www.c-ad.bnl.gov/esfd/RMEM/rhic\\_planning.htm](http://www.c-ad.bnl.gov/esfd/RMEM/rhic_planning.htm)

# RHIC Run 5 Delivered Cu-Cu Luminosity

PHENIX and STAR  
2 Mar estimate when goals  
will be reached



# RHIC Machine/Detector Planning Meeting

- ***RHIC Run5 Plan (estimate based on present understanding of budget)***
  - **18 Nov 04 – Cool down begins**
  - **23 Nov 04 – Blue Ring Cold**
  - **28 Nov 04 – Yellow Cold**
  - **29 Nov 04 – Short in D6-D8 dipoles Yellow Ring, schedule delay**
  - **3 Dec 04 – quad bus-bus short in sector 12, shutdown to repair**
  - **27 Dec 04 – short problem resolved, rings at 4 degrees again**
  - **27 Dec 04 - “2 week” RHIC setup with beam began**
  - **28-29 Dec 04 – found & fixed aperture problem in Yellow Ring (Al foil)**
  - ***5 Jan 05 – “2 week” ramp-up with colliding beams began***
  - ***11 Jan 05 – Physics with Cu-Cu began***
  - **24 Mar 05 – End of 10.3 week Cu-Cu run**
  - **24-26 Mar 05 – Jet Installation etc**
  - ***26 Mar 05 – begin 3 week pp setup***
  - ***16 Apr 05 – Begin 10.0 week pp Physics run***
  - **25 Jun 05 – end pp run, RHIC Run 5 ends**
  - **30 Jun 05 – Cryo switch to LN<sub>2</sub> complete, 32.0 weeks of RHIC cryo operation ends**

# RHIC Machine/Detector Planning Meeting

- Details – as run/planned

➤ *11 Jan – Physics with Cu-Cu began*

➤ *7 Mar (0800) – end 200 GeV/n Cu-Cu*

➤ *7-9 Mar – Setup 62.4 GeV/n Cu-Cu*

➤ *9-15 Mar - 62.4 GeV/n Cu-Cu Physics*

➤ *15 Mar – 8 hours at injection*

➤ *15-22 (1600) Mar - 62.4 GeV/n Cu-Cu Physics*

➤ *22 (1600)-24 (0800) March Cu-Cu Physics at RHIC Injection*

➤ *24 Mar (0800) – End of 10.3 week Cu-Cu run*

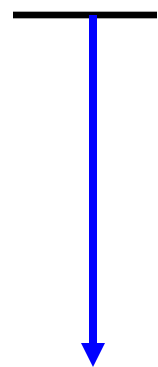
➤ *24-26 Mar 05 Jet Installation etc*

➤ *26 Mar – begin 3 week pp setup*

➤ *16 Apr – Begin 10.0 week pp Physics run*

➤ *25 Jun – end pp run, RHIC Run 5 ends*

➤ *30 Jun – Cryo switch to LN<sub>2</sub> complete, 32.0 weeks of RHIC cryo operation ends*

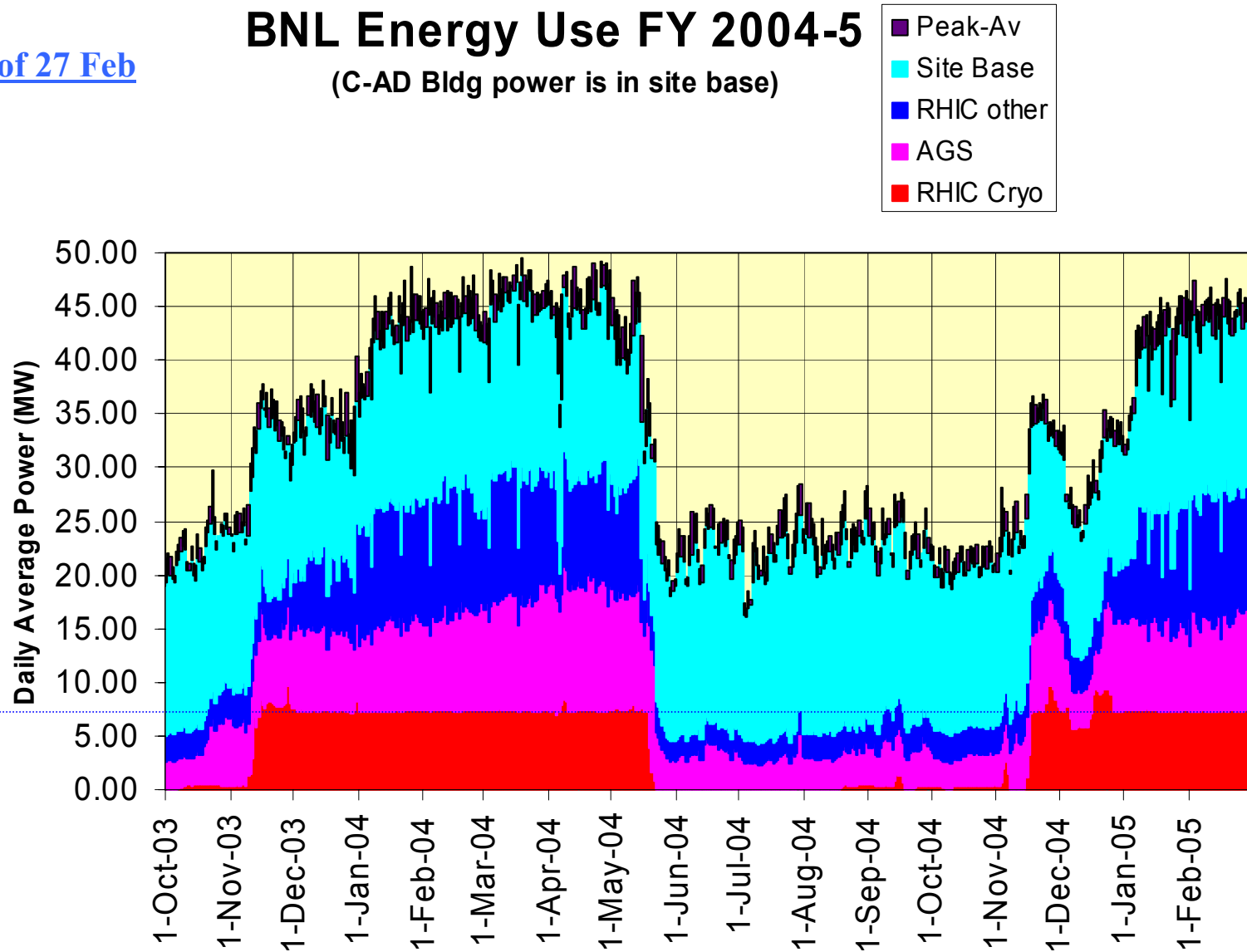


~ finalized

as of 27 Feb

## BNL Energy Use FY 2004-5

(C-AD Bldg power is in site base)






# **RHIC Machine/Detector Planning Meeting**

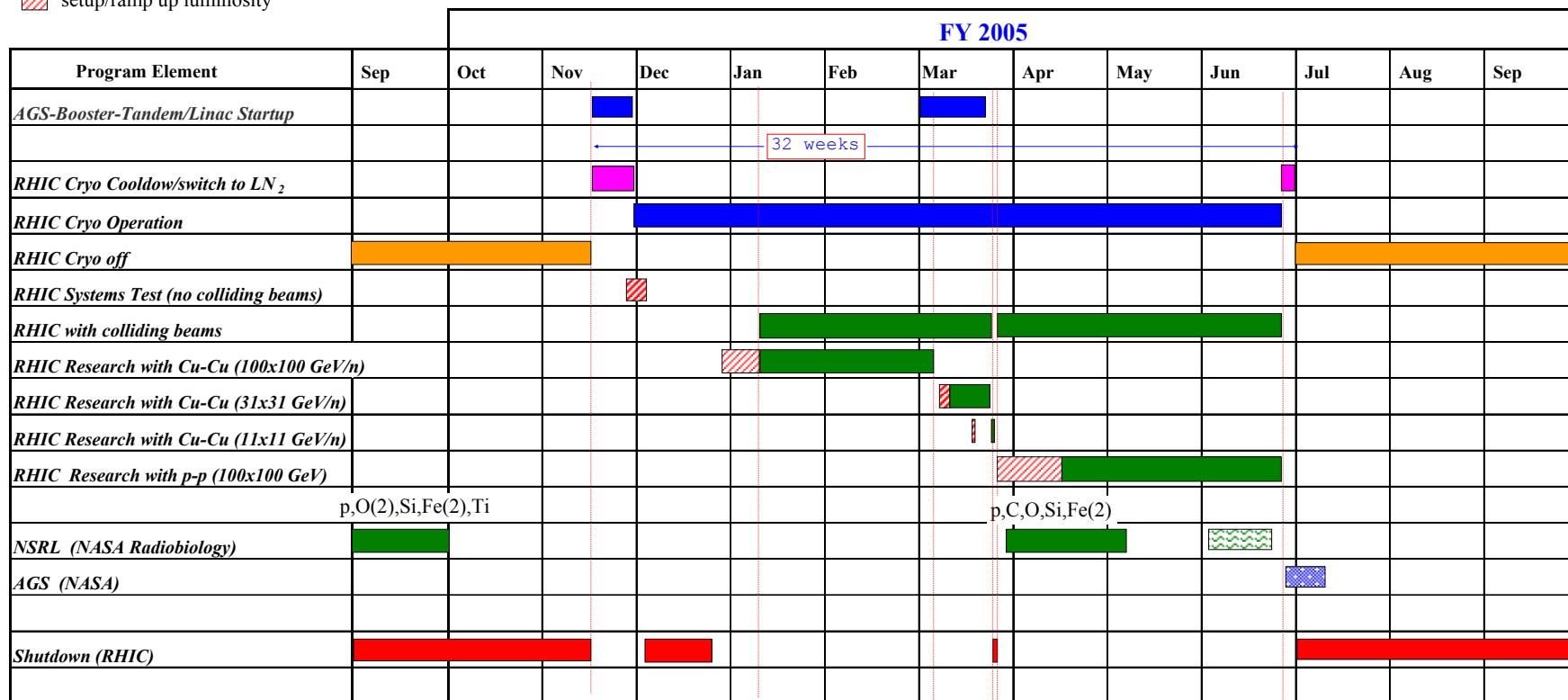
**Archive**

# C-A Operations-FY05

22 Feb 05

-  pending approval/funding
-  schedule to be determined
-  setup/ramp up luminosity

*Schedule - subject to change*



# RHIC Machine/Detector Planning Meeting

17 November 2004

## Purpose of this meeting:

- To address issues and priorities relating to the optimization of physics output from RHIC experiments.
- To discuss and promulgate policy (when needed).



# RHIC Machine/Detector Planning Meeting

17 November 2004

## PAC Recommendations (very short summary):

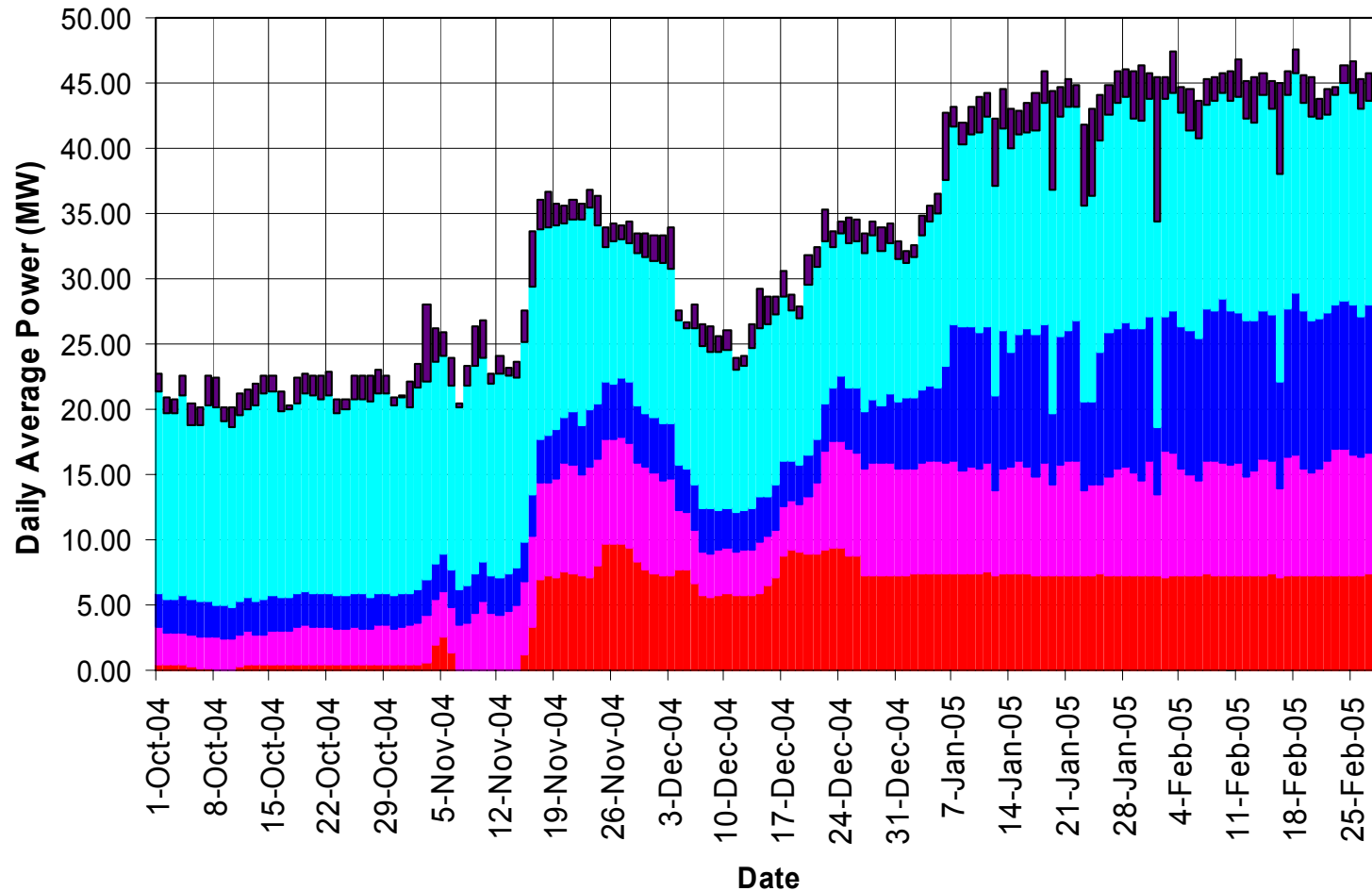
- 8-10 week pp run should have highest priority
- Cu-Cu run should accumulate an integrated delivered luminosity of at least  $7 \text{ nb}^{-1}$  at  $\sqrt{s} = 200 \text{ GeV}$
- Cu-Cu at  $\sqrt{s} = 62.4 \text{ GeV}$  and 1 day at injection is advisable if above goals are met
- 1-2 day pp (unpolarized) run at  $\sqrt{s} = 400\text{-}500 \text{ GeV}$  desirable

# BNL Energy Use FY 2005

(C-AD Bldg power is in site base)

as of 27 Feb

- Peak-Av
- Site Base
- RHIC other
- AGS
- RHIC Cryo



# Experiment Requests

(based on 2 Feb input from experiments)

- **PHOBOS**

- Goal 10 nb<sup>-1</sup> Delivered Luminosity (1B events)
  - 0.4B events considered adequate ( $\sim 4$  nb<sup>-1</sup> Delivered)
  - Recorded Luminosity/Delivered  $\sim 25\%$
  - Delivered Luminosity offset (Physics start 12 Jan) = 0.2 nb<sup>-1</sup>
- Prefer uptime to Luminosity development
- Strongly request 2-3 week 62.4 GeV CuCu run
- Strongly request 1 day of CuCu at injection (22.4 GeV)

- **PHENIX**

- 7 week (to 2 Mar) CuCu 200 GeV should reach goal
  - Recorded Luminosity/Delivered  $\sim 24\%$
  - Delivered Luminosity offset (Physics start 18 Jan) = 2 nb<sup>-1</sup>
  - Goal Delivered Luminosity = 12 nb<sup>-1</sup>
- Prefer Luminosity development continue through  $\sim 11$  Feb
- Request 2 week 62.4 GeV CuCu physics run (very interested)

# Experiment Requests

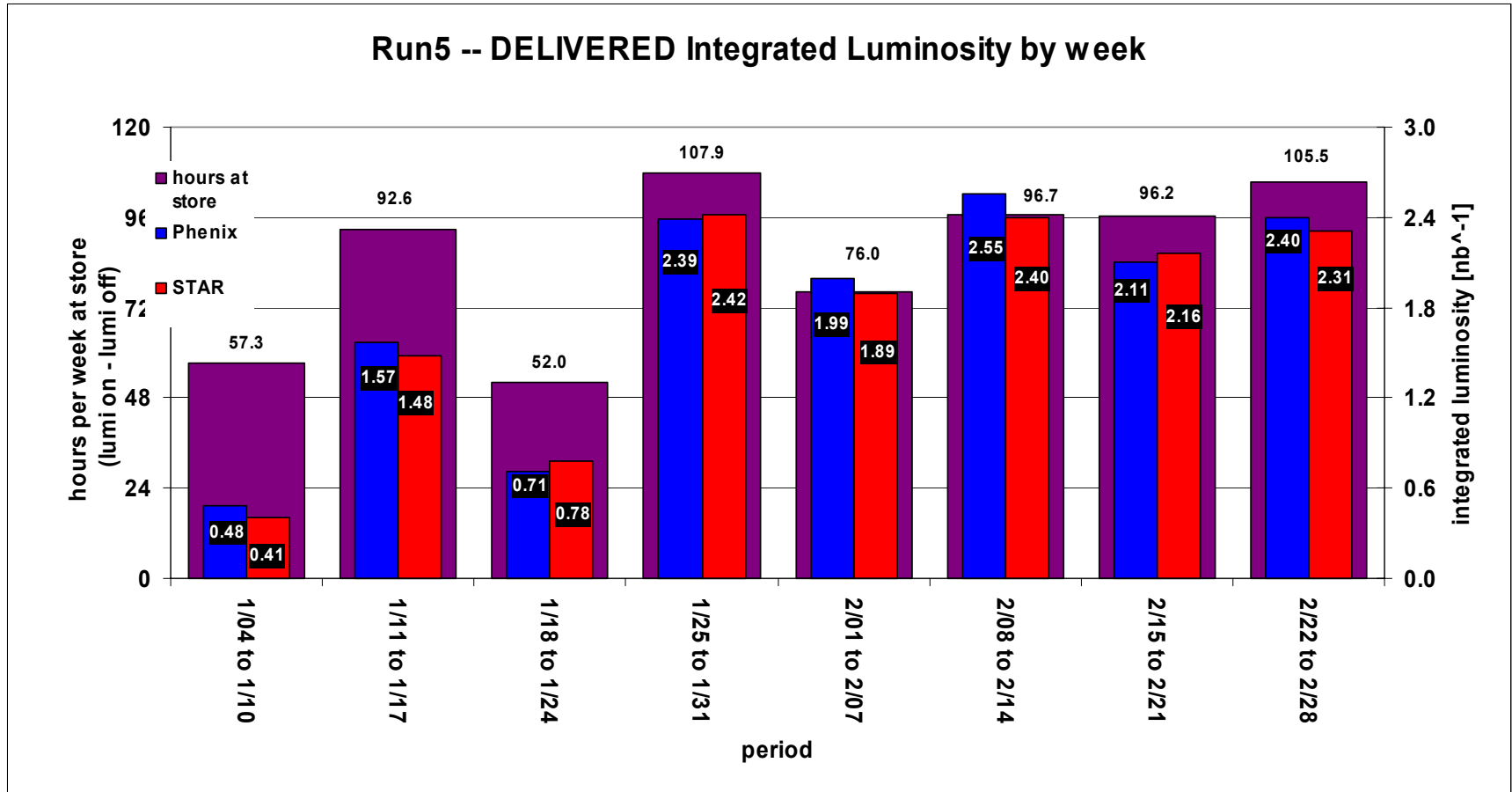
- **BRAHMS**

- Soft Physics goal  $2 \text{ nb}^{-1}$  Delivered
  - Recorded Luminosity/Delivered  $\sim 0.4$
- High-pT goal  $4 \text{ nb}^{-1}$  Delivered (runs after completion of soft physics)
  - Delivered Luminosity offset (Physics start 16 Jan)  $= 0.5 \text{ nb}^{-1}$
  - Recorded Luminosity/Delivered  $\sim 0.4$  (?)
- Luminosity development and/or  $\beta^*$  reduction important
- Request minimum 2 week 62.4 GeV CuCu run

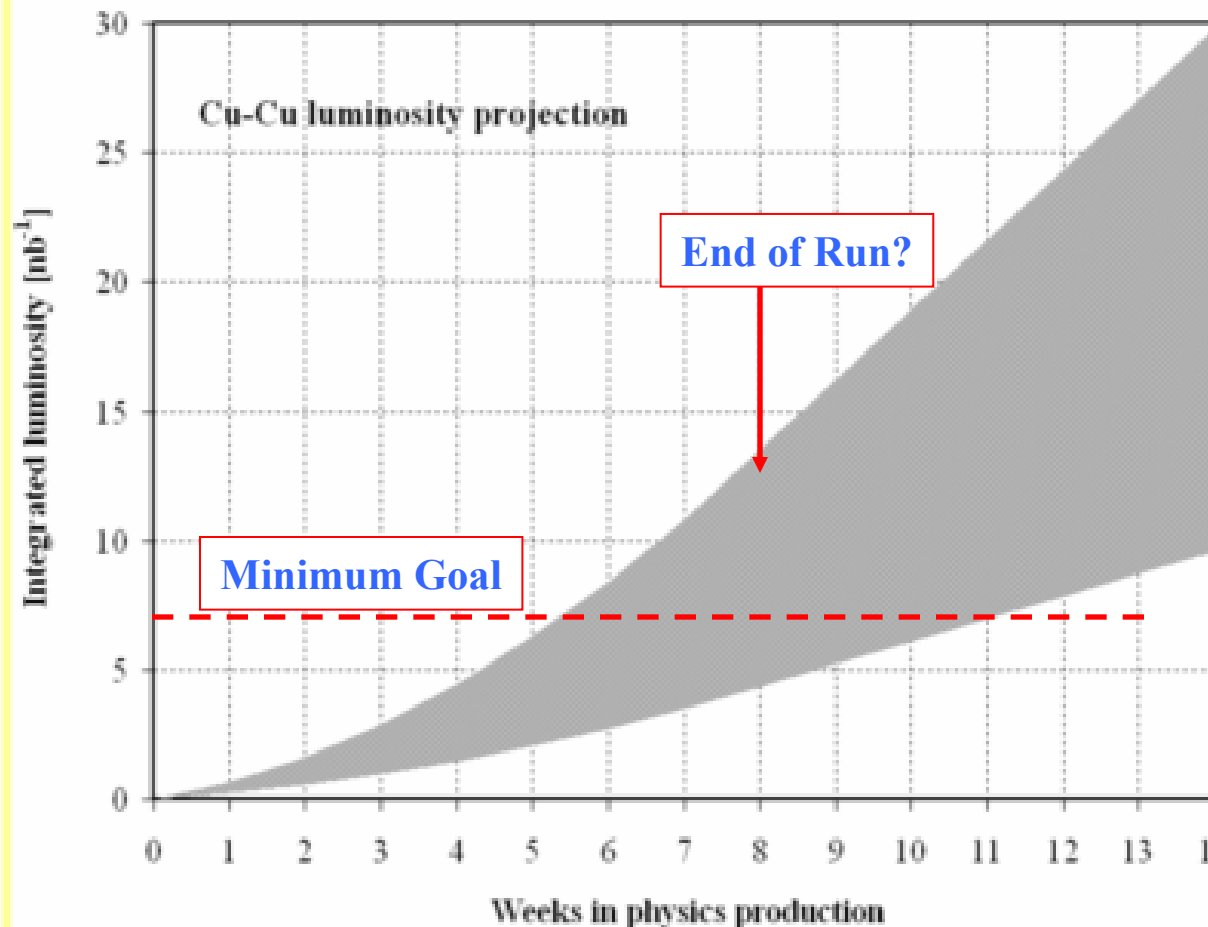
- **STAR**

- 8 week (to 7 Mar) CuCu 200 GeV assumed
  - Recorded Luminosity/Delivered *not specified*
  - Min-Bias Delivered Luminosity offset (Physics start 14 Jan)  $= 1 \text{ nb}^{-1}$
  - Rare Trigger Delivered Luminosity offset (Physics start 31 Jan)  $= 5 \text{ nb}^{-1}$
  - Goal Delivered Luminosity = *not specified*
  - Prefer uptime to Luminosity development
  - Request 10-14 days 62.4 GeV CuCu physics run

# RHIC Machine/Detector Planning Meeting



# RHIC Machine/Detector Planning Meeting



Projections based on the following beam intensity:

Minimum :  
 $45 * 2.9 \times 10^9$

Maximum:  
 $28 * 6.6 \times 10^9$

Luminosity evolution:  
**8 weeks ramp-up** during physics production

$\beta^* = 1$  meter